

Congenital Chikungunya

Hariharan Gopakumar, Sivji Ramachandran

Department of Pediatrics and Neonatology, Amrita Institute of Medical Sciences, Kochi, Kerala, India

ABSTRACT

Chikungunya virus (CHIKV) infection manifesting in neonates is very rare. The prevalence of the entity was described only recently. We describe a neonate with chikungunya who presented with severe thrombocytopenia and features of multisystem involvement. Identification of this entity based on clinical and epidemiological background helps in appropriate management and aids in prognostication of the affected neonate.

Key words:

Acute renal failure, chikungunya, neonates, thrombocytopenia

INTRODUCTION

Chikungunya in neonates is a very rare entity and a diagnostic challenge. The clinical manifestations rarely resemble fulminant sepsis, making clinical decision and prognostication difficult. We report a case of congenital chikungunya with multiorgan dysfunction, the diagnosis of which was made on characteristic clinical and epidemiological grounds.

CASE REPORT

A term appropriate for gestational age male baby was referred from Erode, Tamil Nadu, South India, with suspected sepsis, renal failure, and persistent thrombocytopenia. Baby was born to a 29-year-old mother by elective lower segment cesarean section. Antenatally, mother had high-grade fever and severe multiple joint pains 2 days before delivery. Mother continued to be symptomatic with severe arthralgia in the postnatal period as well and also developed diffuse hyperpigmentation of body within 4 days of onset of symptoms.

Immediate postnatal period was uneventful. On the 3rd day of life, baby developed high-grade fever (103°F) and was admitted in neonatal intensive care unit. There were no other specific clinical findings at the time of admission apart from fever. He was started on antibiotics and other supportive measures presuming sepsis. By the 5th day of life, fever had decreased in intensity. On the 6th day, baby developed generalized edema, tenderness, and paradoxical cry. On the 7th day, baby developed decreased urine output and features of acute renal failure for which dialysis was started and was continued for 2 days.

Platelet transfusions were given for 3 days in view of low platelet count. On the 12th day of life, baby was relatively better and urine output improved. By the 15th day of life, baby was

relatively active and feed was reintroduced. Baby tolerated feeds well. However, the platelet count remained low.

He was referred on the 18th day of life to our center in view of persistent symptoms, paradoxical cry, significant thrombocytopenia, and mild bleeding manifestations. Parents noticed that the baby had turned dark over the days similar to that of the mother.

At the time of admission, baby was lethargic and inactive. There was oral mucosal bleeds with evidence of mucositis. There was no hepatosplenomegaly or other significant clinical features. Investigations showed the following: a markedly elevated C-reactive protein (126 mg/dL), hemoglobin of 11 g/dL, total leukocyte count 28,000/mm³, differential count – lymphocytosis (80%), platelet count 18,000/mm³, normal prothrombin and activated partial thromboplastin time, serum sodium 129 mmol/L, serum potassium 4.9 mmol/L, plasma urea 112 mg/dL, serum creatinine 1.8 mg/dL, serum glutamic pyruvic transaminase (SGPT) 445 IU, and serum glutamic oxaloacetic transaminase (SGOT) 220 IU. Blood culture was reported sterile. TORCH screen and cerebrospinal fluid (CSF) study was normal. Platelet transfusion was given for low platelet

Address for correspondence:

Dr. Hariharan Gopakumar,
Department of Pediatrics and Neonatology, Amrita Institute of
Medical Sciences, Kochi, Kerala, India.
E-mail: gopan2596@yahoo.com

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counts. Plasma urea and serum creatinine normalized over the next 4 days of admission with appropriate fluid management. Other laboratory parameters also normalized over the next 2 weeks. Magnetic resonance imaging (MRI) done showed focal areas of bleeds in the basal ganglia and subcortical areas. No active intervention was considered.

On detailed evaluation of history, similar clinical condition was reported to be present in the nearby areas and it was found that chikungunya was frequently diagnosed in that particular area. Mother was tested for chikungunya IgM and IgG, both of which were reported positive. However, the serology of the baby was reported negative. However, the diagnosis of congenital chikungunya was made based on the typical clinical manifestations in the mother and baby and on the strong epidemiological profile. With supportive management, the baby improved. However, the irritability and paradoxical cry persisted until the discharge of the baby. She was discharged after 3 weeks of intensive care stay and kept under follow-up.

DISCUSSION

Chikungunya fever (CHIKF) is an acute febrile illness caused by an arthropod-borne alphavirus, CHIKV. Available data suggest that CHIKV can be both endemic and epidemic.^[1]

A maternal to child transmission of the disease has been described, although it is very uncommon. During the epidemic peak in Reunion Island, the attack rate was as high as 8.3% in pregnant women.^[2] In these instances, a higher risk for abortion in the first trimester has been reported compared to when the disease was acquired in the last trimester.^[3]

Neonatal infection could be associated with fever, poor feeding, tenderness, unexplained apnea, distal edema, and various skin manifestations.^[4] Severe illnesses have been observed with associated encephalopathy, including pathologic MRI findings (brain swelling; cerebral hemorrhages) and possible evolution toward persistent disabilities.

In the acute stage, diagnosis is possible with reverse transcription polymerase chain reaction (RT-PCR) or

serology. Anti-CHIKV IgM antibodies are detectable after an average of 2 days (1–12 days) by enzyme-linked immunosorbent assay (ELISA) and remains positive for several weeks to 3 months.^[5] IgG antibodies can be detected in the convalescent samples a few weeks later and persist for years. CHIKV infection seems to provide long-lasting protective immunity.

The mother in this case was a confirmed case of chikungunya with typical clinical features and positive test results for IgM and IgG at 2 months of clinical diagnosis. She had severe arthralgia for a long duration after the pregnancy, requiring complete bed rest.

Although the serological test was negative in the baby, the diagnosis that was made in the mother along with the typical clinical features facilitated the diagnosis of chikungunya in the neonate. The paradoxical cry in the baby could be due to multiple joint inflammations. The refractory shock suggested myocarditis and the elevated liver enzymes pointed toward possible hepatic inflammation. Baby had unexplained severe hyperpigmentation subsequent to the acute stage, which further substantiated the diagnosis. On follow-up at 6 months of age, baby had fixed flexion deformity of the right thumb, suggestive of tenosynovitis probably as sequelae of arthritis. Apart from this, baby was clinically normal.

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